

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): An acoustic signal packet communicating method,  
[[In]] in packet communication between a first communication apparatus including at least a transmitting unit and ~~one or more other communication apparatuses~~ at least one second communication apparatus including at least a receiving unit, [[an]] the acoustic signal packet communicating method comprising:

in the transmitting unit,

[[the]] a step of dividing an acoustic signal such as a voice or music signal into given time segments called frames to generate a frame acoustic signal<sub>1</sub>[[;]]

[[the]] a step of generating acoustic signal corresponding data corresponding to the frame acoustic signal of each frame, (~~hereinafter referred to as “acoustic signal corresponding data”~~) from the frame acoustic signal<sub>1</sub>[[;]] and

[[the]] a step of containing the frame acoustic signal and the acoustic signal corresponding data in packets and transmitting the packets;

in the receiving unit,

[[the]] a step of storing received packets in a receiving buffer<sub>1</sub>[[;]]

[[the]] a step of specifying [[the]] a frame number of a frame to be extracted<sub>1</sub>[[;]]

a loss detecting step of determining whether or not a packet containing a frame acoustic signal associated with the frame number of the frame to be extracted is stored in the receiving buffer<sub>1</sub>[[;]]

[[if]] when it is determined in the loss detecting step that a packet containing the frame acoustic signal associated with the frame number of the frame to be extracted is stored in the receiving buffer, an acoustic signal packet decoding step of extracting the frame

acoustic signal from the packet stored in the receiving buffer and providing the frame acoustic signal as a frame output signal;

~~if it is determined~~ when a packet loss occurs, based on a determining in the loss detecting step that the packet containing the frame acoustic signal associated with the frame number of the frame to be extracted is not stored in the receiving buffer ~~(hereinafter referred to as “if a packet loss occurs”)~~, a loss handling step of extracting acoustic signal corresponding data for the frame, which is a lost frame, ~~(hereinafter referred to as a “lost frame”)~~ from a packet stored in the receiving buffer and generating a frame output acoustic signal by using the acoustic signal corresponding data<sub>1</sub>[[;]] and

[[the]] a step of concatenating frame output acoustic signals outputted from the acoustic signal packet decoding step or the loss handling step and outputting a concatenated frame output acoustic signal;

the acoustic signal packet communicating method ~~being characterized by further comprising the steps of:~~

in the transmitting unit, including, in [[the]] a same packet, ~~that contains~~ a frame acoustic signal, delay amount control information that has a value that indicates a difference between two frames, and acoustic signal corresponding data corresponding to [[for]] a frame acoustic signal having a frame number different by [[a]] the value specified by the delay amount control information from the frame number of the frame acoustic signal contained in the packet ~~and delay amount control information~~ and transmitting the packet; and

in the receiving unit, [[if]] when a packet loss occurs, obtaining acoustic signal corresponding data having the same frame number as that of a lost frame from the packet in the receiving buffer by using the delay amount control information included in the packet.

Claim 2 (Currently Amended): The acoustic signal packet communicating method according to claim 1, ~~characterized in that, in packet communication between one wherein~~ the first communication apparatus ~~including~~ includes both of the transmitting unit and the receiving unit and ~~the at least one second communication apparatus one or more other~~ communication apparatuses including includes both of the transmitting unit and the receiving unit, the acoustic signal packet communicating method further comprising:

in ~~[[the]]~~ a respective receiving unit of the first communication apparatus or the at least one second communication apparatus,

both or one of a first determining step of determining a jitter state of a received packet and a second determining step of determining a loss state of a received packet, ~~[[;]]~~ and

~~[[the]]~~ a step of using the result of the determination made in any of the determining steps to determine the number of packets to be stored in the receiving buffer as a targeted value of the number of stored packets (~~hereinafter referred to as the “targeted value of the number of stored packets”~~); and

in the transmitting unit in the same communication apparatus that includes the respective receiving unit,

~~[[the]]~~ a step of setting the delay amount control information to a value smaller than or equal to the targeted value of the number of the stored packets.

Claim 3 (Currently Amended): The acoustic signal packet communicating method according to claim 1, ~~characterized in that, in packet communication between one wherein~~ the first communication apparatus ~~including~~ includes both of the transmitting unit and the receiving unit and ~~one or more other~~ the at least one second communication apparatus ~~including~~ includes both of the transmitting unit and the receiving unit, the acoustic signal packet communicating method further comprising: ~~[[,]]~~

in ~~[[the]]~~ a respective receiving unit of the first communication apparatus or the at least one second communication apparatus,

both or one of a first determination step of determining a jitter state of a received packet and a second determination step of determining a loss state of a received packet<sub>1</sub>[[;]]  
and

[[the]] a step of using the result of the determination made in the determination step to determine the number of packets to be stored in the receiving buffer as a targeted value of the number of stored packets ~~(hereinafter referred to as the “targeted value of the number of stored packets”)~~<sub>1</sub>[[;]] and

[[the]] a step of sending the targeted value of the number of stored packets to the transmitting unit in the same communication apparatus; and

in the transmitting unit in the same communication apparatus that includes the respective receiving unit,

[[the]] a step of containing the targeted value of the number of stored packets sent from the receiving unit in a packet as information for specifying delay amount control information to be set in the transmitting unit at the other end of communication.

Claim 4 (Currently Amended): The acoustic signal packet communicating method according to claim 1, ~~characterized in that, in communication between one~~ wherein the first communication apparatus including includes both of the transmitting unit and the receiving unit and one or more other communication apparatuses the at least one second communication apparatus including includes both of the transmitting unit and the receiving unit, the acoustic signal packet communicating method further comprising:

in ~~[[the]]~~ a respective receiving unit of the first communication apparatus or the at least one second communication apparatus,

[[the]] a step of measuring the number of packets stored in the receiving buffer as a remaining buffer amount (~~hereinafter referred to as the “remaining buffer amount”~~),  
and

[[the]] a step of sending the remaining buffer amount to the transmitting unit in the same communication apparatus; and

in the transmitting unit in the same communication apparatus that includes the respective receiving unit,

[[the]] a step of containing the remaining buffer amount sent from the receiving unit in a packet as information for specifying delay amount control information to be set in the transmitting unit at the other end of communication and transmitting the packet.

Claim 5 (Currently Amended): An acoustic signal packet communicating method,  
[[In]] in communication between [[one]] a first communication apparatus including at least a transmitting unit apparatus and ~~one or more~~ at least one second communication apparatus including at least a receiving unit, [[an]] the acoustic signal packet transmitting method comprising ~~the steps of:~~

in the transmitting unit,

dividing an acoustic signal such as a voice or music signal into given time segments called frames to generate a frame acoustic signal,  
[[;]]

generating acoustic signal corresponding data corresponding to the frame acoustic signal (~~hereinafter referred to as “acoustic signal corresponding data”~~) from the frame acoustic signal,  
[[;]] and

containing the frame acoustic signal and the acoustic signal corresponding data in packets and transmitting the packets,

the acoustic signal packet transmitting method further comprising: ~~characterized by comprising the step of,~~

in the transmitting unit, including, in ~~[[the]]~~ a same packet, ~~that contains~~ the frame acoustic signal, delay amount control information that has a value that indicates a difference between two frame numbers, and acoustic signal corresponding data corresponding to ~~[[for]]~~ a frame acoustic signal having a frame number different by ~~[[a]]~~ the value specified by the delay amount control information from the frame number of the frame acoustic signal contained in ~~that of the packet and the delay amount control information and~~ transmitting the packet.

Claim 6 (Currently Amended): The acoustic signal packet transmitting method according to claim 5, ~~characterized in that, in communication between one~~ wherein the first communication apparatus including includes both of the transmitting unit and the receiving unit and ~~one or more other communication apparatuses~~ the at least one second communication apparatus including includes both of the transmitting unit and the receiving unit, the acoustic signal packet transmitting method ~~comprises the step of,~~ further comprising:

in ~~[[the]]~~ a respective transmitting unit of the first communication apparatus or the at least one second communication apparatus, setting the delay amount control information to a value smaller than or equal to the number of packets to be stored in the receiving unit in the same communication apparatus that ~~include~~ includes the respective transmitting unit, the number of packets being determined at that receiving unit.

Claim 7 (Currently Amended): The acoustic signal packet transmitting method according to claim 5, ~~characterized in that, in communication between one~~ wherein the first communication apparatus including includes both of the transmitting unit and the receiving

unit and ~~one or more other communication apparatuses~~ the at least one second communication apparatus including includes both of the transmitting unit and the receiving unit, ~~the acoustic signal packet transmitting method comprises the step of further comprising:~~

in ~~[[the]]~~ a respective transmitting unit of the first communication apparatus or the at least one second communication apparatus, ~~[[;]]~~ containing in a packet the number of the packets to be stored in the receiving unit of the same communication apparatus that includes the respective transmitting unit, the number of packets being determined at that receiving unit, as information for specifying delay amount control information to be set in the transmitting unit at the other end of communication and transmitting the packet.

Claim 8 (Currently Amended): The packet transmitting method according to claim 5, ~~characterized in that, in communication between one~~ wherein the first communication apparatus including includes both of the transmitting unit and the receiving unit and ~~one or more other communication apparatuses~~ the at least one second communication apparatus including includes both of the transmitting unit and the receiving unit, the acoustic signal packet transmitting method ~~comprises the step of further comprising:~~

in ~~[[the]]~~ a respective transmitting unit of the first communication apparatus or the at least one second communication apparatus, containing in a packet the number of packets stored in the receiving buffer that is measured in the receiving unit in the same communication apparatus that includes the respective transmitting unit, as information for requesting to set delay amount control information to be set in the transmitting unit at the other end of communication.

Claim 9 (Currently Amended): An acoustic signal packet communicating method,  
[[In]] in packet communication between [[one]] a first communication apparatus including at  
least a transmitting unit and ~~one or more other communication apparatuses~~ at least one  
second communication apparatus including at least a receiving unit, [[an]] the acoustic signal  
packet receiving method comprising:

in the receiving unit,

[[the]] a step of storing received packets in a receiving buffer,<sub>1</sub>[[;]]

[[the]] a step of specifying the frame number of a frame to be extracted,<sub>1</sub>[[;]]

a loss detecting step of determining whether or not a packet containing a frame  
acoustic signal associated with the frame number of the frame to be extracted is stored in the  
receiving buffer,<sub>1</sub>[[;]]

[[if]] when it is determined at the loss detecting step that a packet containing the  
frame acoustic signal associated with the frame number of the frame to be extracted is stored  
in the receiving buffer, an acoustic signal packet decoding step of extracting the frame  
acoustic signal from the packet stored in the receiving buffer and providing the frame  
acoustic signal as a frame output acoustic signal,<sub>1</sub>[[;]]

~~if it is determined~~ when a packet loss occurs, based on determining in the loss  
detecting step that the packet containing the frame acoustic signal associated with the frame  
number of the frame to be extracted is not stored in the receiving buffer (~~hereinafter referred~~  
~~to as “if a packet loss occurs”~~), a loss handling step of extracting acoustic signal  
corresponding data (~~hereinafter referred to as “acoustic signal corresponding data”~~)  
corresponding to the acoustic signal in the frame, which is a lost frame, (~~hereinafter referred~~  
~~to as the “lost frame”~~) from a packet stored in the receiving buffer and generating a frame  
output acoustic signal by using the acoustic signal corresponding data,<sub>1</sub>[[;]] and



[[the]] a step of concatenating frame output acoustic signals outputted from the acoustic signal packet decoding step or the loss handling step and outputting a concatenated frame output acoustic signal; and

~~the acoustic signal packet receiving method being characterized by comprising the step of,~~

~~in the receiving unit,~~

[[if]] when a packet loss occurs, a step of obtaining acoustic signal corresponding data having the same frame number as that of a lost frame from a packet in the receiving buffer by using delay amount control information included in a packet.

Claim 10 (Currently Amended): The acoustic signal packet receiving method according to claim 9, ~~characterized in that, in packet communication between one~~ wherein the first communication apparatus ~~including~~ includes both of the transmitting unit and the receiving unit and ~~one or more other~~ the at least one second communication apparatuses ~~including~~ includes [[and]] both of the transmitting unit and the receiving unit, the acoustic signal packet receiving method further comprising ~~comprises~~:

in [[the]] a respective receiving unit of the first communication apparatus or the at least one second communication apparatus,

both or one of a first determination step of determining a jitter state of a received packet and a second determination step of determining a lost state of a received packet<sub>1</sub>[[;]]

[[the]] a step of determining the number of packets to be stored in a receiving buffer by using the result of the determination made at any of the determination steps<sub>1</sub>[[;]]  
and

[[the]] a step of sending the number of packets to be stored in the receiving buffer to the transmitting unit in the same communication apparatus that includes the respective receiving unit.

Claim 11 (Currently Amended): The acoustic signal packet receiving method according to claim 9, ~~characterized in that, in packet communication between one~~ wherein the first communication apparatus including includes both of the transmitting unit and the receiving unit and ~~one or more other apparatuses including the~~ at least one second communication apparatus includes both of the transmitting unit and the receiving unit, the acoustic signal packet receiving method further comprising ~~comprises the steps of:~~

in [[the]] a respective receiving unit of the first communication apparatus or the at least one second communication apparatus,

measuring the number of packets stored in the receiving buffer as a remaining buffer amount ~~(hereinafter referred to as the “remaining buffer amount”),~~[[;]] and

sending the remaining buffer amount to the transmitting unit in the same communication apparatus that includes the respective receiving unit.

Claim 12 (Currently Amended): An acoustic signal packet communicating system in which packet communication is performed between [[one]] a first communication apparatus including at least a transmitting unit and ~~one or more other communication apparatuses at least one second communication apparatus~~ including at least a receiving apparatus, the acoustic signal packet communicating system comprising:

the transmitting unit having:

means for dividing an acoustic signal such as a voice or music signal into given time segments called frames to generate a frame acoustic signal<sub>1</sub>[[;]]

means for generating acoustic signal corresponding data corresponding to the frame acoustic signal of each frame (~~hereinafter referred to as the “acoustic signal corresponding data”~~ from the frame acoustic signal<sub>1</sub>[[;]] and

means for containing the frame acoustic signal and the acoustic signal corresponding data in packets and transmitting the packets; and

the receiving unit having:

means for storing received packets in a receiving buffer<sub>1</sub>[[;]]

means for specifying the frame number of a frame to be extracted<sub>1</sub>[[;]]

loss detecting means for determining whether or not a packet containing a frame acoustic signal associated with the frame number of the frame to be extracted is stored in the receiving buffer<sub>1</sub>[[;]]

acoustic signal packet decoding means for, if it is determined in the loss detecting means that the packet containing the frame acoustic signal associated with the frame number of the frame to be extracted is stored in the receiving buffer, extracting the frame acoustic signal from the packet stored in the receiving buffer and providing the frame acoustic signal as a frame output acoustic signal<sub>1</sub>[[;]]

loss handling means for, ~~if it is determined~~ when a packet loss occurs when based on determining in the loss detecting means that the packet containing the frame acoustic signal associated with the frame number of the frame to be extracted is not stored in the receiving buffer (~~hereinafter referred to as “if a packet loss occurs”~~), extracting an acoustic signal corresponding data for the frame, which is a lost frame, (~~hereinafter referred to as the “lost frame”~~) from a packet stored in the receiving buffer and generating a frame output acoustic signal by using the acoustic signal corresponding data<sub>1</sub>[[;]] and

means for concatenating frame output acoustic signals outputted from the acoustic signal packet decoding means or the loss handling means and outputting the concatenated frame output acoustic signal<sub>i</sub>[[;]]

~~the acoustic signal packet communicating system being characterized in that:~~

wherein the transmitting unit has means for including, in ~~[[the]]~~ a same packet that contains a frame acoustic signal, delay amount control information that has a value that indicates a difference between two numbers, and acoustic signal corresponding data corresponding to ~~[[for]]~~ a frame acoustic signal having a frame number different by ~~[[a]]~~ the value specified by the delay amount control information from the frame number of the frame acoustic signal contained in the packet ~~and the delay amount control information~~; and

the receiving unit has means for, if a packet loss occurs, obtaining acoustic signal corresponding data having the same frame number as that of a lost frame from the packet in the receiving buffer by using the delay amount control information included in the packet.

Claim 13 (Currently Amended): An acoustic signal packet communicating apparatus comprising:

a transmitting unit having:

means for dividing an acoustic signal such as a voice or music signal into given time segments called frames to generate a frame acoustic signal<sub>i</sub>[[;]] and

means for generating acoustic signal corresponding data corresponding to the frame acoustic signal of each frame ~~(hereinafter referred to as “acoustic signal corresponding data”)~~ from the frame acoustic signal<sub>i</sub>[[;]] and

means for containing the frame acoustic signal and the acoustic signal corresponding data in packets and transmitting the packets; and

a receiving unit having:

means for storing received packets in a receiving buffer<sub>1</sub>[[;]]

means for specifying the number of a frame to be extracted<sub>1</sub>[[;]]

loss detecting means for determining whether or not a packet containing a frame acoustic signal associated with the number of the frame to be extracted is stored in the receiving buffer<sub>1</sub>[[;]]

acoustic signal packet decoding means for, if it is determined in the loss detecting means that the packet containing the frame acoustic signal associated with the number of the frame to be extracted is stored in the receiving buffer, extracting the frame acoustic signal from the packet stored in the receiving buffer and providing the frame acoustic signal as a frame output acoustic signal<sub>1</sub>[[;]]

loss handling means for, ~~if it is determined~~ when a packet loss occurs based on determining in the loss detecting means that the packet containing the frame acoustic signal associated with the number of the frame to be extracted is not stored in the receiving buffer (~~hereinafter referred to as “if a packet loss occurs”~~), extracting acoustic signal corresponding data for the frame, which is a lost frame, (~~hereinafter referred to as a “lost frame”~~) from a packet stored in the receiving buffer and generating a frame output acoustic signal by using the acoustic signal corresponding data<sub>1</sub>[[;]] and

means for concatenating frame output acoustic signals outputted from the acoustic signal packet decoding means or the loss handling means and outputting the concatenated frame output acoustic signal,

~~the acoustic signal packet communicating apparatus being characterized in that:~~

wherein the transmitting unit has means for including, in [[the]] a same packet<sub>1</sub>, ~~that contains~~ the frame acoustic signal, delay amount control information that has a value that indicates a difference between two frame numbers, and acoustic signal corresponding data corresponding to [[for]] a frame acoustic signal having a frame number different by [[a]] the

value specified by the delay amount control information from the frame number of the frame acoustic signal contained in the packet ~~and delay amount control information~~ and transmitting the packet<sub>1</sub>[[;]] and

the receiving unit has means for, [[if]] when a packet loss occurs, obtaining acoustic signal corresponding data having the same frame number as that of a lost frame from the packet in the receiving buffer by using the delay amount control information included in the packet.

Claim 14 (Currently Amended): The acoustic signal packet communicating apparatus according to claim 13, wherein ~~characterized in that~~:

the receiving unit [[has]] having:

both or one of first determining means for determining a jitter state of a received packet and second determining means for determining a loss state of a received packet<sub>1</sub>[[;]] and

means for determining the number of packets to be stored in a receiving buffer, which is a targeted value of the number of stored packets, ~~(hereinafter referred to as the “targeted value of the number of stored packets”)~~ by using the result of the determination made in any of the determining means; and

the transmitting unit has means for setting the delay amount control information to a value less than or equal to the targeted value of the number of stored packets.

Claim 15 (Currently Amended): The acoustic signal packet communication apparatus according to claim 13, wherein ~~characterized in that~~:

the receiving unit [[has]] having:

both or one of first determining means for determining a jitter state of a received packet and second determining means for determining a loss state of a received packet,[[;]] and

means for determining the number of packets to be stored in a receiving buffer, which is a targeted value of the number of stored packets, ~~(hereinafter referred to as the “targeted value of the number of stored packets”)~~ by using the result of the determination made in the determining means; and

the transmitting unit has means for containing the targeted value of the number of stored packets in a packet as information for specifying delay amount control information to be set in the transmitting unit at the other end of communication and transmitting the packet.

Claim 16 (Currently Amended): The acoustic signal packet communicating apparatus according to claim 13, wherein ~~characterized in that~~:

the receiving unit has means for measuring the number of packets stored in the receiving buffer as a remaining buffer amount ~~(hereinafter referred to as the “remaining buffer amount”)~~; and

the transmitting unit has means for including the remaining buffer amount in the same packet that contains the frame acoustic signal as information for specifying delay amount control information to be set in the transmitting unit at the other end of communication and transmitting the packet.

Claim 17 (Currently Amended): [[An]] A computer readable storage medium which stores an acoustic signal packet communicating program for causing a computer to perform the steps of the acoustic signal packet communicating method according to claim 1.

Claim 18 (Currently Amended): [[An]] A computer readable storage medium which stores an acoustic signal packet transmitting program for causing a computer to perform the steps of the acoustic signal packet transmitting method according to claim 5.

Claim 19 (Currently Amended): [[An]] A computer readable storage medium which stores an acoustic signal packet receiving program for causing a computer to perform the steps of the acoustic signal packet receiving method according to claim 9.